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# BATTLE OF SAVO ISLAND – LESSONS LEARNED AND FUTURE IMPLICATIONS

BY

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#### **USAWC STRATEGY RESEARCH PROJECT**

# BATTLE OF SAVO ISLAND—LESSONS LEARNED AND FUTURE IMPLICATIONS

by

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#### ABSTRACT

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As the United States enters into the 21<sup>st</sup> century, it will face new and different challenges that will be more complex than those encountered in the past. Evolutions in doctrine, training, and equipment modernization, influenced by informational and technological advances, will enhance U.S. ability to accomplish national objectives. Valuable lessons learned can be realized by studying past operations that failed to understand the threat and capitalize on friendly capabilities. The Battle of Savo Island in August 1942 is one such event. This short but violent naval engagement, a daring Japanese night surface attack conducted at the beginning of the Guadalcanal campaign on 9 August 1942, was a significant tactical victory for the Imperial Japanese Fleet and has been called the worst blue water defeat in the U.S. Navy's history. This paper will address the shortcomings at Savo Island, particularly in terms of intelligence, command and control, training, force protection, and leadership and discuss these concepts as they apply to current and future operations in the 21<sup>st</sup> century.

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# **PREFACE**

I would like to thank Colonel Brian Moore for his outstanding guidance, support and assistance. His understanding of the strategic, operational, and tactical levels of war, along with an unprecedented knowledge of past campaigns and conflicts, has proved invaluable throughout the course of this research.

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# BATTLE OF SAVO ISLAND—LESSONS LEARNED AND FUTURE IMPLICATIONS

If the enemy is thrown off balance, he must not be given time to recover. Blow after blow must be struck in the same direction; the victor, in other words, must strike with all his strength, and not just against a fraction of the enemy's. <sup>1</sup>

The United States will face new and different challenges in the 21st century, far more complex than those encountered during the previous decades. International terrorism has escalated, along with developing countries and failed nation states' instabilities and increasing internal conflicts, threatening peace and stability around the world. The U.S. military must be capable of executing a myriad of missions, which include protecting the homeland, combating terrorism, conducting small scale contingencies, or waging major theater warfare.<sup>2</sup> The response to exert all appropriate instruments of national power to protect citizens, resolve conflicts, or strengthen democracies is an important element of the attempt to shape the international environment in support of the overall U.S. engagement strategy. The U.S. military, influenced by informational and technological advances, is evolving to more readily accomplish the objectives of the President and Secretary of Defense and is undergoing a transformation in doctrine, training, equipment, and research and development. These initiatives will enhance attainment of full spectrum dominance, achieved through the interdependent application of dominant maneuver, precision engagement, focused logistics, and full dimension protection. The goal is to be a capabilities based force, harnessing the organizational and technological expertise that synchronizes the strengths to create power that will not only deter but also defeat any threat.3

Future adversaries, as evidenced by the heinous attack of the Pentagon and World Trade Centers on 11 September 2001 are more likely to attack vulnerabilities and to do so by largely asymmetric means. This concept will most likely dominate the threats posed by adversaries in the future. Fundamental to the U.S. strategy is the ability to understand and respond to these threats.<sup>4</sup>

Matching a strength against an opponent's vulnerabilities is not new, as much of military history and theory focuses on these concepts.<sup>5</sup> The Battle of Savo Island is one such event. This short, but violent, naval engagement, a daring Japanese night surface attack conducted at the beginning of the Guadalcanal campaign on 9 August 1942, was a significant tactical victory for the Imperial Japanese Navy (IJN) and has been called the worst blue water defeat in the U.S. Navy's history. This paper will study that engagement, highlighting lessons learned and

the strategies employed by the Allies and the Japanese, and then apply those lessons to operations which U.S. forces will invariably plan, prepare, and execute in the 21<sup>st</sup> century.

# STRATEGIC OVERVIEW

American grand strategy throughout World War II was based on the survival of Great Britain and its ability to remain a relevant power in the postwar period. This objective was to be achieved by directing all coalition efforts against Germany and Italy until their unconditional surrender. While the major American emphasis was to be focused on the European theater, with eighty percent of U.S. military production, shipping, and supplies devoted to aid England and Russia,<sup>6</sup> strategy in the Pacific theater focused on the defeat of Japan within the constraints imposed by the higher priority European theater. Initial operations in the Pacific were to be defensive, primarily concerned with holding the Malay Barrier, a line extending from Malaya through the Netherlands East Indies to northern Australia. National and military leaders had arrived at this strategy in early 1941, recognizing the greater war potential and overriding military dangers imposed by Germany to Great Britain and her allies. <sup>7</sup>

The Japanese decision to wage war with the Allied powers grew out of the necessity to acquire natural resources. To achieve this, Japanese leaders developed and set in motion one of the most ambitious concepts of conquest in modern history. This plan envisioned a limited war, focused initially on the immobilization of the U.S. Pacific fleet prior to declaration of war; followed by the defeat of American and British forces in the Philippines, Guam, Wake Island, Hong Kong, Burma, and Malaya. A primary objective was the seizure the Netherlands East Indies, which the Japanese needed for the abundant raw materials and natural resources (Fig 1- Japanese Area of interest). Japan would then establish an impregnable defensive perimeter on both flanks in the Pacific and sever the lines of communication between Australia and the U.S.. They believed this strategy would force the U.S. to negotiate for peace, and allow Japan to then focus completely on conquering China. Such a war was the only way Japan could hope to challenge the industrial might of the United States.

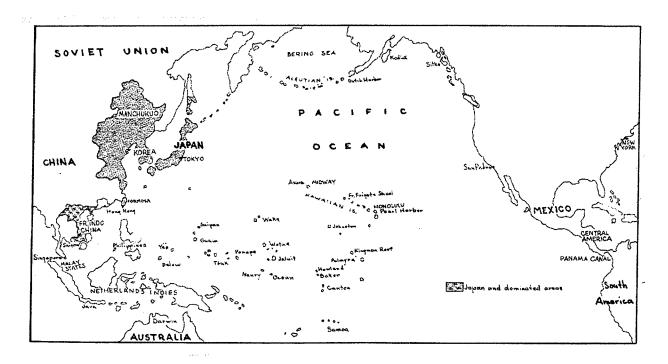


FIGURE 1. JAPANESE AREA OF INTEREST

In pursuit of these ends, the Japanese had, in early 1942, severely damaged the U.S. fleet at Pearl Harbor, driven the U.S. Asiatic fleet from the Philippines, and sunk the combined Dutch, Australian, and U.S. Asiatic Fleet in the East Indies. Additionally, they punished the Royal Navy in Malaya and Ceylon, captured Southeast Asia, the Philippines, the resources in the East Indies, and established outposts in the Aleutians in the north Pacific and the Bismarck islands in the south Pacific. These successes put Japan in a position to seize Port Moresby on New Guinea's southern coast, an ideal location to stage an invasion of Australia.

Allied Pacific forces, on the strategic defensive to this point, were able to score their first significant victory of the war by stopping the Japanese southern advance on Australia by way of New Guinea at the Battle of the Coral Sea in March 1942. At Midway in June 1942, the U.S. won a decisive naval battle resulting not only in the destruction of a Japanese carrier task force, but more importantly, in the loss of Japan's strategic initiative. The U.S. Joint Staff, sensing an opportunity and influenced by Admiral King (the Chief of Naval Operations who consistently urged the necessity to halt Japan in the Pacific and in particular to maintain the U.S.-Australian lines of communication), determined U.S. strategy in the Pacific must quickly transition from an improvised defense to one of a limited offense. The challenge to Pacific planners however, was limited manpower and equipment availability due to the buildup of Allied forces in preparation for

an invasion of North Africa. Fortunately, leaders in Great Britain even agreed that the priority of the European theater over the Pacific could not be realized until the Australian lines of communication were secure. <sup>11</sup>

The Joint Staff developed Operation WATCHTOWER, the objective defined as seizure and occupation of the New Britain-New Ireland-New Guinea area. (Fig 2- Operation WATCHTOWER) An Allied amphibious force would establish an initial foothold in the Solomon Islands, sequentially advancing through the chain, followed with an advance by forces from Australia through New Guinea to eventually envelop Rabaul in New Britain, which at that time was a Japanese stronghold which blocked the ocean routes from Australia to Tokyo.

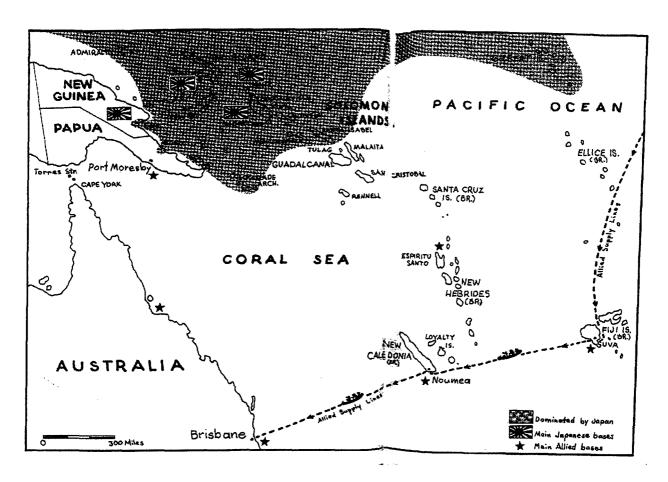


FIGURE 2. OPERATION WATCHTOWER

WATCHTOWER's first task would be the seizure of Santa Cruz Islands,<sup>12</sup> but in early July 1942, the Allies discovered the Japanese military establishing an airfield in the Solomon Islands on the island of Guadalcanal. This airfield, if fully operational, could pose new threats to Port Moseby and further imperil the American lines of communication to Australia.<sup>13</sup> The

planning cycle was accelerated due to this latest intelligence and on 10 July 1942, an operation order was issued to seize Guadalcanal and the nearby island of Tulagi. Unfortunately, there was limited planning and preparation time available for "Operation Shoestring," as it came to be known by the sailors and marines. Operational commanders adamantly expressed their concerns to the Joint Staff as to the lack of adequate means to achieve this mission, but were overruled, as the Joint Staff was prepared to accept a high degree of risk in order to accomplish the objectives (ends). As a result, the first amphibious operation undertaken by the United States since 1898 was launched in the Solomon Islands on 7 August 1942.

# THE PRINCIPALS

# JAPANESE:

Admiral Isoroku Yamamoto (Commander in Chief, Combined Fleet). Yamamoto, recognizing the Japanese Navy needed a significant moral victory after convincing defeats at Coral Sea and Midway, reluctantly approved the daring raid to interdict Allied amphibious operations at Guadalcanal that resulted in the engagement at Savo Island. He was extremely disappointed in Admiral Mikawa, believing he settled for a tactical victory against the screening group, when in fact operational success may have been realized had Mikawa continued on to achieve the original objective of destroying the transports.<sup>15</sup>

<u>Vice Admiral Gunichi Mikawa</u> (Commander, Eighth fleet). Mikawa, an experienced but cautious commander, uncharacteristically developed a bold plan to conduct a night surface attack to destroy U.S. Navy transport vessels supporting the Guadalcanal and Tulagi amphibious operations. His forces soundly defeated the Allied screening force in little more than one hour, sinking four and damaging three additional Allied warships, but withdrew without attempting to engage the transports. The first strategic Allied ground offensive in WWII would have been in serious peril if Mikawa had reinforced success and achieved his original objective.<sup>16</sup>

# **ALLIES:**

Admiral Ernest J. King (Chief of Naval Operations and Commander in Chief, U.S. Fleet). King, convinced the Japanese had reached their culminating point at the battle of Midway, vehemently urged the Joint Staff to approve offensive operations in the Pacific. He directed the seizure of Guadalcanal to prevent the Japanese development of an airfield which would be used to support the isolation of Australia. He referred to the Battle of Savo Island as "the blackest day" for U.S. naval surface forces.<sup>17</sup>

<u>Vice Admiral Frank J. Fletcher</u> (Commander, Allied Expeditionary Force). Fletcher commanded the Allied amphibious and air support force at Guadalcanal. He had lost two aircraft carriers in the previous eight months, one each at the Battles of Coral Sea and Midway. These previous experiences made him overcautious and, concerned with survivability and sustainability, withdrew the Guadalcanal carrier groups the evening before the Savo Island engagement, resulting in disproportionate damage to Allied forces. Admiral Nimitz relieved Fletcher of command two months after the Savo Island debacle.<sup>18</sup>

Rear Admiral Richmond K. Turner (Commander, Amphibious Force). Turner, responsible for planning Operation WATCHTOWER while a staff officer in the U.S. Navy war plans section, commanded amphibious operations at Guadalcanal. He misread the intelligence signals and indicators and grossly underestimated the capabilities of the Japanese naval leaders and sailors, resulting in a significant tactical and potential strategic defeat for Allied forces in the Pacific. He remained in the Pacific theater for the duration of the war, achieving four star rank in 1945.<sup>19</sup>

# **AREA OF OPERATIONS**

The Solomon Islands are 1200 miles from Australia and consist of eight main islands and many small ones spread over 700 miles of ocean. The island chain runs northwest to southeast, with Bougainville to the north, New Georgia in the middle, and Guadalcanal in the South. Guadalcanal is 92 miles long, 33 miles wide, and 20 miles south of Florida Island, where Tulagi is located offshore to the south. The waters between the Solomons are referred to as the

"Slot" (Fig 3- The Slot). At the eastern end of the 400 mile long Slot is Savo Sound, named for nearby Savo Island. <sup>20</sup>

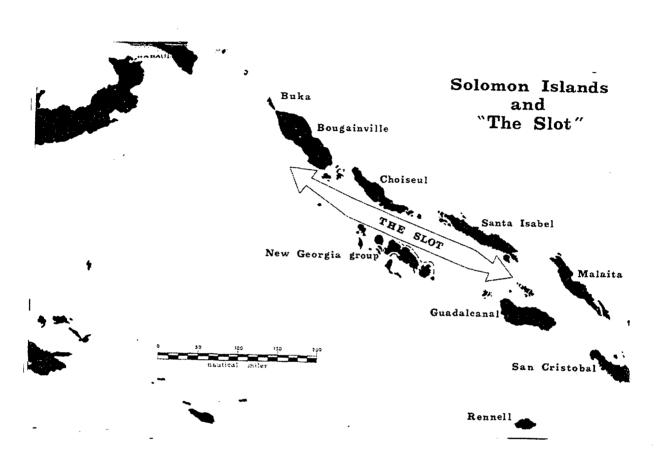


FIGURE 3.THE SLOT

#### **SETTING THE CONDITIONS**

The Japanese, in their ongoing strategy to isolate Australia, occupied Tulagi on 2 May 1942 with a small force. They occupied Guadalcanal on 8 June 1942 and began construction of an airfield, realizing that land based aircraft could seriously disrupt lines of communication and threaten Allied bases in New Hebrides and Australia. (Fig 2) Admiral King and Chester W. Nimitz, the Commander in Chief, Pacific Fleet, received intelligence on 5 July 1942 via air reconnaissance of the Japanese activity on Guadalcanal. To that point, Guadalcanal had not been identified as an objective in the overall plan. It quickly became the initial objective, with

the emphasis that the airfield had to be captured before it became operational under Japanese control.

There was no single overall Allied commander in the Pacific theater. This was a conscious decision based on the argument that with a front extending from the Aleutians to Australia, the strategic issues presented were beyond the capabilities of one individual. Command was divided into the Southwest Pacific Area under General Douglas MacArthur and the Pacific Ocean Areas under Admiral Nimitz. The Pacific Ocean Areas was further subdivided into North, Central, and South.

Vice Admiral Robert Ghormley commanded the South Pacific Area and on 10 July 1942 received the order to seize Guadalcanal and Tulagi. Admiral Ghormley established three Task Forces to carry out the operation. Vice Admiral Frank Fletcher commanded Task Force 61— the carrier group and the and the expeditionary force. Rear Admiral Richmond Turner commanded Task Force 62—the amphibious force, and Rear Admiral John McCain led Task Force 63—composed of both ground and seaplane tender aircraft. Commanding the ground phase of the operation was Major General Alexander Vandegrift, Commanding General of the First Marine Division.<sup>22</sup>

Major General Vandegrift faced significant challenges in preparation for the assault on Guadalcanal and Tulagi. He had hoped to spend up to six months training in New Zealand for the amphibious assault. In reality, his marines had only six weeks to prepare, with efforts hampered by limited resources and poor intelligence of the islands. Additionally, his forces were split, with one regiment in New Zealand, one in Samoa, and one enroute from the U.S.. Rehearsals finally began off Fiji on 27 July 1942, but limited landing craft availability prevented detailed practice for the amphibious operations, and did not include the landing of supplies, a serious omission that resulted in long delays on the beachhead when the operation began.

The marine amphibious landing in the Solomons began early on 7 August 1942. Initial operations at Guadalcanal went smoothly because the Japanese (mostly construction workers) were taken by surprise and, in most cases, quickly overwhelmed. The more established Japanese bases at Tulagi, Gavutu, and Tanambogo provided stiffer resistance and, on the evening of 8 August 1942, the marines were still engaged in securing initial positions on these islands.<sup>23</sup>

The Japanese headquarters responsible for the defense of the Solomons was located 600 miles northwest in Rabaul, on the Island of New Britain. Vice Admiral Mikawa, 8<sup>th</sup> Fleet commander, immediately dispatched reconnaissance aircraft and a small ground force (all available Japanese Army forces under his control) in order to reinforce the existing Guadalcanal

garrison in an attempt to repel the Allied amphibious operation. Mikawa and his staff quickly developed a concept to interrupt and curtail initial Aliied successes. The plan entailed a night surface attack using a limited number of Japanese warships, focusing on the destruction of the Allied transport vessels at Guadalcanal and Tulagi before they could offload their supplies and cargo.<sup>24</sup> Arguably, Mikawa viewed the marine ground forces as the Allied operational center of gravity, the ship- to- shore operations as a vulnerability, and the transport offloading area as a decisive point.

Although the plan was bold and ambitious, Mikawa believed the risks acceptable for several reasons. First, if the marine ground force was the operational center of gravity, a devastating strike against a critical vulnerability (i.e., the transports) would impede Allied efforts and allow time for a significant Japanese counteroffensive to be prepared. Second, the Japanese strategic position in the Solomons (the stepping stone to the South Pacific), in pursuit of the overall objective of isolating Australia, was now seriously threatened. Finally, after significant setbacks at the Battles of Coral Sea and Midway, the Japanese Navy needed a dramatic victory to boost the morale of the fleet.<sup>25</sup>

The Japanese intent was to maximize their strengths and exploit Allied vulnerabilities. They had the technological advantage in torpedoes, as each ship was equipped with the Type 93 "Long Lance" torpedo, a devastating weapon effective to 40,000 yards at a speed of 49 knots. Additionally, the Japanese were comfortable conducting night operations. In previous years the leadership, realizing a war with the U.S. was inevitable and the Japanese industrial base could not match U.S. efforts in terms of ships and planes, placed a heavy emphasis on night fighting. Hard, realistic training, both day and especially at night, was the norm in the Japanese Navy. Another advantage was the use of the element of surprise, which had been a key component of Japanese thinking for decades. The Russo-Japanese war in 1904 had started with a surprise attack, as had the attack on the U.S. at Pearl Harbor in 1941. Japan's philosophy was based on the teachings of General Toshio Tani, a highly respected officer and instructor at the Japanese War College, who repeatedly emphasized the need for surprise, both tactically and strategically, to prevent any hostile power from seizing the initiative.

Admiral Mikawa believed the Allies were more concerned with an air vice surface threat and would disregard the surface capabilities of the Japanese Navy. Thus, he determined the element of surprise could best be employed at night with a select number of highly trained crews. As his most senior and experienced staff officer, Captain Shigenori Kami said, "Don't worry, even the devil will avoid us if we are bold enough. I'm sure the attack will succeed."

The Japanese strike force departed Rabaul on the afternoon of 7 August 1942. It consisted of five heavy cruisers (*Chokai, Aoba, Kinugasa, Furutaka, Kako*), two light cruisers (*Tenru* and *Yubari*), and one destroyer (*Yunagi*). Mikawa's route would take his force south of New Ireland Island, down the eastern coast of Bougainville, and through the Slot, to be in position off Savo Island by midnight on 8 August 1942.<sup>30</sup>

Mikawa's force was sighted on three separate occasions by three different reconnaissance elements. The first encounter occurred at approximately 1800 on 7 August when a B17 Flying Fortress from Southwest Pacific Command observed the Japanese force south of New Ireland. The second sighting was by a U.S. submarine, which spotted the force at 2000 east of New Britain. Due to the relative close proximity to the known Japanese base at Rabaul, these two reports did not spark much interest from intelligence analysts and Allied leaders. The third sighting (Fig 4- Allied reconnaissance sightings) occurred at 1026 on 8 August by an Australian Hudson reconnaissance aircraft operating east of Bougainville.<sup>31</sup>

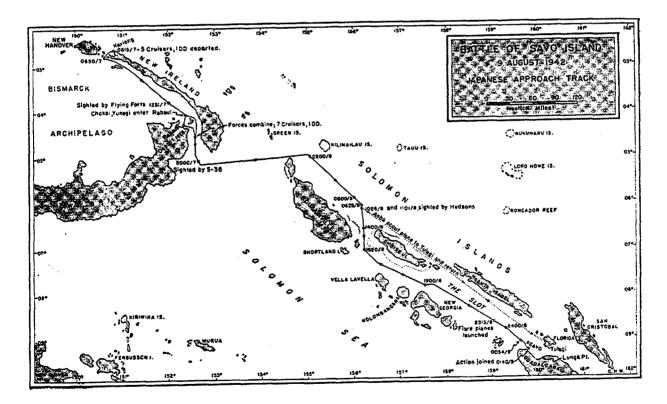


FIGURE 4. ALLIED RECONNAISSANCE SIGHTINGS

Historians have discussed in recent years the timeliness of this third report from the aircrew through the Southwest Pacific headquarters to the South Pacific headquarters and

eventually to the Amphibious Task Force at Guadalcanal. Disregarding the transit time for the report to make its way through the myriad of headquarters, the actions taken, or not taken, by the Allies as the result of the intelligence analysis (regardless of when the information was received), would prove catastrophic for Allied sailors and marines.

The Australian reconnaissance pilot reported Mikawa's force as three cruisers, three destroyers, and two seaplane tenders. Admiral Turner, responsible for the amphibious operation, surmised that more than three cruisers would be required for surface action, and the presence of seaplane tenders indicated the Japanese meant to establish a seaplane base, most likely at Rikato Bay, near Santa Isabel island, approximately 150 miles from Guadalcanal. To this point, Turner's transport and cargo vessel unloading activities had been considerably delayed by Japanese air attacks on 7 and 8 August 1942. He felt the new sighting of seaplane tenders indicated the Japanese meant to continue the air interdiction by establishing a forward presence of aircraft closer to the area of operations.<sup>32</sup> This conclusion was supported by Allied intelligence estimates and analysis, which posited the most dangerous and likely enemy course of action to be via carrier or land based aircraft, discounting the relatively limited extent of Japanese surface strength in the area. Lack of concern and preparation regarding the possibility of surface action would cost them.

Admiral Turner had 19 transports in the Task Force, with 14 vessels supporting Guadalcanal and the other five at Tulagi. Thirteen destroyers and mine sweepers provided local security and close in protection for the transports. The outer perimeter was secured by a screening group commanded by British Rear Admiral V.A.C. Crutchley, who was also Turner's second in command. The screening group's mission was to defend the transports against enemy surface, air, and submarine attack during amphibious operations.<sup>33</sup>

Admiral Crutchley split his force of eight cruisers and eight destroyers into three elements. Light cruisers San Juan and HMAS Hobart, plus destroyers Monseen and Buchanan screened the eastern approach from Indispensable Strait. Destroyers Ralph Talbot and Blue established a radar and anti-submarine screen at the far western approaches to Savo Bay. Heavy cruisers Vincennes, Astoria, Quincy, and destroyers Wilson and Helm operated between Savo and Florida Island, and were responsible for the northwest approach to the bay. To the south, between Savo and Guadalcanal Island, Australian heavy cruisers Canberra and Australia, with U.S. cruiser Chicago and destroyers Patterson and Bagley, screened the southwestern approach. Admiral Crutchley was located with this element (Fig 5- Screening group disposition).

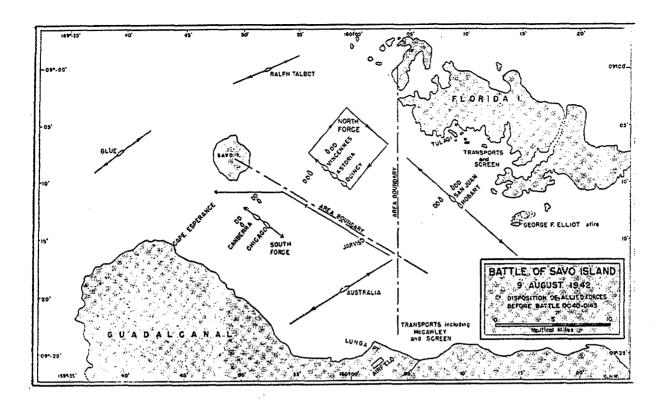


FIGURE 5. SCREENING GROUP DISPOSITION

Crutchley's force was dispersed and could not provide mutual support in the event of a surface attack into the area. But this was a conscious decision, based on the assumption that Allied reconnaissance aircraft would provide advanced warning, allowing adequate time to mass his forces in the north, south, or east. He also relied heavily on the radar capabilities of destroyers Ralph Talbot and Blue on the outer screen to detect any surface or sub-surface threats that had evaded Allied air reconnaissance. As a result, each screening group commander operated independently, with no special guidance or orders provided in the event of a night surface attack. An additional challenge for Admiral Crutchley concerned his relationship with his subordinate commanders. He had only been in command of the vessels in the San Juan and Vincennes group for less than two weeks, and had not even had the opportunity to meet the commanders face to face.

Admiral Crutchley was urgently summoned to Admiral Turner's flagship at 2030 on 8 August. Turner wanted to meet with Admiral Crutchley and Major General Vandegrift concerning Admiral Fletcher's (Air Expeditionary Commander) decision to withdraw his three air craft carriers from the area of operations, even though very little cargo had been offloaded and moved ashore. Fletcher cited two reasons for the early withdrawal of his air support forces. He

stated the loss of 21 per cent of his fighter plane force during air operations on 7 and 8 August was unacceptable "in view of the large number of enemy torpedo and bomber planes in the area," and claimed the majority of his vessels were critically short of fuel. Fletcher was located 120 miles south of Guadalcanal at the time he initiated the request to retire his force. Without waiting for a response from Admiral Ghormley's headquarters, Fletcher began moving southeast, away from Guadalcanal, at 1800 on the 8<sup>th</sup>, essentially leaving Admiral Turner with no air support at Guadalcanal and Tulagi.<sup>36</sup>

Admiral Turner decided that, with no air cover and the probability of additional air attacks from the seaplane base the Japanese were most likely establishing at Rikato Bay, the risks to the transports were too great. He informed Crutchley and Vandegrift of his intent to continue transport offload throughout the night, but would cease operations and depart the area on 9 August. The conference adjourned at midnight and Crutchley, not wanting to maneuver at night to rejoin the southern screening group 25 miles to the west, decided to remain in the vicinity of Turner's security forces. Unfortunately, he did not inform his subordinates of this decision. The thought of a night surface attack against the transport force was still remote. Another factor was continuous Allied operations. For two full days the force had been in readiness condition one—meaning the entire watch was on duty and all weapon systems manned. Condition two, with only half the watch on duty, had been established for the night of 8 August. Hundreds of officers and men had hoped for a few hours of uninterrupted sleep.

# THE ENGAGEMENT

The Japanese force arrived in the vicinity of Savo Island just prior to midnight on 8 August 1942. Admiral Mikawa intended to employ his vessels in a single file battle formation. Japanese doctrine for a night attack required illumination of the target, usually by air, when the target was within range of the surface vessel's weapons systems. <sup>37</sup> Three Japanese aircraft had been launched from the Mikawa's cruisers at 2300 on 8 August to provide this support. Destroyer Ralph Talbot, operating furthest to the west in Admiral Crutchley's screening group, observed and reported these aircraft. However, Allied intelligence assessment determined these aircraft to be friendly. Admiral Mikawa retained the element of surprise!

The Japanese lead vessels spotted the destroyers Blue and Ralph Talbot at 0043 and 0050, respectively, on 9 August, but the Allied destroyer's radar was ineffective and their lookouts failed to detect the approaching Japanese. Mikawa, electing to enter the channel to

the south of Savo Island, steamed to within a mile of the southern screen, at which point he initiated the engagement with a torpedo strike. His seaplanes waited until the torpedoes were near the target, and with precise timing and coordination, they deployed aerial flares. Simultaneously, at 0131 Mikawa's seven cruisers commenced firing.<sup>38</sup>

The Australian cruiser *Canberra*, silhouetted by flares dropped from Japanese float planes, was the first target, taking more than 20 plus hits in a matter of five minutes, and was rendered powerless without returning a single main gun round. The destroyer *Patterson* was then struck with surface shells, had two guns destroyed, and was set afire. The U.S. cruiser *Chicago*, whose commander was in tactical command due to Admiral Crutchley's absence, was next to be engaged. It was struck by Japanese torpedoes and quickly taken out of action. Captain H.D. Bode of the *Chicago*, busy fighting his ship and trying to keep it afloat, was unable to maintain command and control of the screening group. He also failed to issue the necessary orders to subordinates, alert adjacent forces, or inform Admiral Turner's headquarters of the attack and provide an accurate situation report. The Allied southern screening group was combat ineffective by 0149 on 9 August. To this point, Japanese vessels had not sustained a single hit from Allied fire.<sup>39</sup>

Admiral Mikawa now maneuvered his element to engage the northern screening force. Captain F.L. Riefkohl, Allied commander of that force, was unsure of the exact location of the southern force and also not aware Admiral Crutchley had been called away to a meeting with Turner. Riefkohl heard the sound of the initial engagement, but no communications, low visibility, and a light rain made observation difficult. The Japanese force, still undetected, used searchlights to illuminate Riefkohl's vessels, engaging the cruiser \*Astoria\* first with surface weapons. The \*Quincy\* was next, sustaining devastating surface and torpedo hits, and at 0235 on 9 August, was the first Allied vessel to sink. The \*Vincennes\*, Captain Riefkohl's ship, had all main guns destroyed and, engulfed in flames, capsized and sank at 0250. 40 The northern groups two destroyer escorts engaged the Japanese force but with minimal effects. Admiral Mikawa's force had broken formation during the northern contact and at this point command and control became an issue for the Japanese.

Japanese commanders experienced command and control difficulties as the result of the engagement of the northern screening group, and several vessels had broken contact with the main body. Admiral Mikawa assessed three hours would be needed to regroup his force into the appropriate battle formation in which to attack the transports. It would be daylight at that point and Mikawa was concerned his forces would be devastated by Allied air support (he was

unaware of Admiral Fletcher's decision to withdraw the carriers the previous night). After quickly weighing the options and conferring with the staff, Mikawa made the decision at 0220 on 9 August to withdraw his force. 41 (Fig 6 Savo Island Engagement)

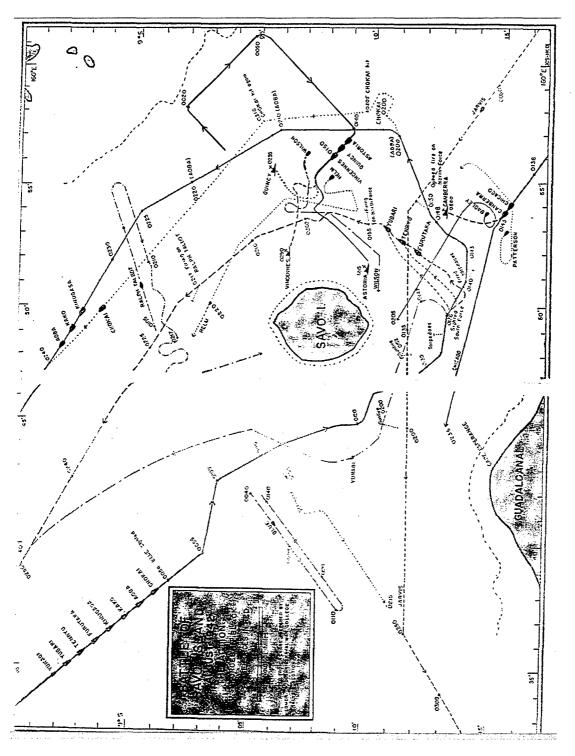


FIGURE 6. SAVO ISLAND ENGAGEMENT

Allied forces aggressively fought to save their damaged ships throughout the early morning of 9 August. Despite valiant efforts, the Australian cruiser *Canberra*, dead in the water, was sunk at 0800 by friendly fire. The cruiser *Astoria's* crew battled fires for ten hours, but at 1215 this vessel also sank just south of Savo Island. The cruiser *Chicago* and destroyers *Ralph Talbot* and *Patterson* sustained heavy damage but remained afloat.

In the final analysis, Allied losses included the destruction of four cruisers and damage to three others, and the force sustained 1023 killed or died of wounds, with 709 wounded. This was almost 50 per cent of the total casualties sustained at Pearl Harbor, all in less than an hour. Five Japanese vessels were slightly damaged, with 58 sailors killed and 70 wounded.<sup>42</sup>

#### **LESSONS LEARNED**

The Savo Island engagement was a sound defeat for the Allied forces and could have been disastrous had the Japanese exploited their initiative and attempted to engage the transport force. A series of inquiries shortly after the incident and subsequent after action reviews identified a myriad of deficiencies and shortcomings, the most significant involving Allied inability to effectively understand and appreciate Japanese capabilities and analyze their intentions. In addition, there was severe breakdown in Allied command and control functions and a lack of Allied "battle mindedness" and training proficiency. Other lessons learned include:

- Allied strategic leaders assumed enormous risk by overriding subordinate leader's
  concerns regarding adequate planning and preparation time for the Guadalcanal and
  Tulagi invasions. The strategic goal of maintaining U.S.-Australia lines of
  communication resulted in a deliberate and calculated risk at the operational and tactical
  level.<sup>44</sup>
- Operational control, to include long range reconnaissance and intelligence functions, required the coordination and cooperation of two major commands, the Southwest Pacific and South Pacific Area. These efforts were not synchronized and were compounded by communication arrangements that did not facilitate the rapid flow and exchange of information.<sup>45</sup>
- 3. The physical location of the Allied Expeditionary Commander significantly effected the tactical outcome of the engagement. Admiral Fletcher, never closer than 80 miles to the

- amphibious operations, did not have a clear picture as to the criticality of these activities. He was not positioned to adequately synchronize air, surface, and amphibious operations. The decision to withdraw the carriers ignited a chain of events and had disastrous effects, the most significant being the cessation of transport activities due to lack of air cover.<sup>46</sup>
- 4. Allied commanders were overconfident concerning the capabilities of ship based radar to identify Japanese movements. Senior leaders did not understand how to effectively employ or understand the limitations of this system. The two destroyers on the western most screen that were equipped with this radar provided no mutual support or radar search cover redundancy, and experienced frequent equipment malfunctions due to operating in such close proximity to the islands. As Admiral Turner stated, "knowledge possessed by me and the staff concerning radar was practically non-existent."
- 5. The Allies experienced a significant breakdown in command and control, particularly at the tactical level. The screening force was essentially three separate elements, and had received limited guidance and direction from Admiral Crutchley. The chain of command was not well established, as only one subordinate commander was told of Admiral Crutchley's departure. Just one vessel, the destroyer Patterson, made any attempt to transmit a contact report, and it was vague and incomplete, and only received by three other ships. The Chicago and Vincennes group commanders were to busy fighting their own ships and failed to keep Admiral Crutchley informed. Crutchley and Turner had no situational awareness or clear perspective as to the devastation inflicted upon their forces and as a result could not attempt to redirect assets or effect the outcome.<sup>48</sup>
- 6. Allied commanders underestimated the capabilities of the Japanese forces. Although long range reconnaissance was hampered by the lack of Allied aircraft and the challenge of coordinating the search efforts of two major commands, the Allied operational and tactical commanders received intelligence (gathered from the Australian Hudson reconnaissance aircraft) concerning the enemy sortie as early as the afternoon of 8 August. An aggressive effort to confirm or deny this force never materialized. Allied commanders failed to appreciate the Japanese capacity for surprise, and based their plans on their estimate of what they thought the Japanese would do—not what they could do. This failure to disregard the capabilities resulted in a flawed operational concept and was one of the primary factors in the Allied defeat at Savo.<sup>49</sup>
- 7. The screening group's command and control procedures, along with the employment concept of the subordinate elements, were not rehearsed, coordinated, or synchronized.

Commanders were unsure of the chain of command, guidance was nonexistent, battle tracking was ineffective, and a questionable scheme of maneuver was developed and executed. The results of every inquiry and post battle report cited the breakdown in command and control as a primary cause for the Allied failure.<sup>50</sup> One report was especially critical of the screening force disposition:

It is felt the basic concept of the defense of our transports off Guadalcanal 8-9 August 1942 was wrong. Our cruisers should have been kept concentrated and our destroyer scouts projected far enough westward to ensure timely warning.<sup>51</sup>

8. Allied force protection (especially in terms of local and operational security), situational awareness, gunnery skills, and training proficiency were inadequate and directly responsible for the inordinate Allied casualties and lopsided Japanese victory. In addition to overlooking intelligence indicators and underestimating Japanese capabilities in terms of their tactical and technical proficiency, the Allied training status was deficient. <sup>52</sup> As Admiral Turner stated:

I have concluded that our forces, both sea and land, at that time were simply not battle-minded. None had been in surface action of any kind. Few had been in action. Training schedules had very largely been relaxed since the beginning of the war. There had been few coordinated battle exercises and very little target practice. The Navy was still obsessed with a strong feeling of technical and mental superiority over the enemy...The net result was a fatal lethargy of mind which included a confidence without a readiness. We were not mentally ready for hard battle.<sup>53</sup>

Since the beginning of the war, unit commanders, primarily because of time and the reality of being on the tactical, operational, and strategic defensive, had not conducted effective unit training. Commanders relied on their peacetime training experiences, and thought combat would maintain unit training standards, not having realized the proportion of time spent in actual combat was extremely limited. As the war progressed (due in large part to lessons learned at Savo), Allied commanders realized training must be intensified in war, and replicate wartime conditions as closely as possible.<sup>54</sup> Another indication of Allied lack of focus on critical wartime tasks is reflected in their gunnery results during the Savo Island engagement. Allied cruisers and destroyers fired a combined total of 471 four, five, or eight inch shells, registering ten hits on Japanese

vessels. The Japanese, on the other hand, fired 1867 rounds, recording 159 strikes on Allied ships. The Allies had a strike percentage of 2 per cent as compared to 12 per cent for the Japanese. This was because Japanese doctrine emphasized night training, and continuously worked to improve these gunnery skills. The majority of the Allied crews had not engaged in any limited visibility training since the beginning of the war, and none had conducted night firing in eight months.<sup>55</sup>

An important aspect of force protection was the physical and mental condition of Allied sailors, especially the officers. Condition one, with all stations fully manned and alert, had been established on the evening of 6 August in preparation for the following day's amphibious landing at Guadalcanal and Tulagi. The Allied ships had supported this assault with indirect fires, defended against Japanese air attacks, and protected the transports for 48 continuous hours. Condition two, which required only half the crew to be on watch, was established the evening of 8 August, just several hours before the Savo Island engagement. The reaction time to progress from condition two to one was insufficient and prevented the Allies from mounting a credible response.<sup>56</sup> Admiral Crutchley summed it best: "The fact must be faced that we had an adequate force placed with the very purpose of repelling surface attack and when the surface attack was made, it destroyed our force."

#### THE AFTERMATH

The U.S. Navy, after some internal and eventually external pressure, launched a series of investigations to determine the causes of the Savo Island debacle. Several U.S. commanders were replaced or relieved, and tensions with Great Britain/Australia became strained (particularly in the media) because of Admiral Crutchley's involvement in the engagement. The U.S. Navy leadership emphasized the heroism of the junior leaders and sailors at Savo, but were hesitant to publicly discuss the shortcomings in senior leadership, training, readiness, casualty figures, etc., for concern of the impact this engagement would have on the national will and the morale of the military, given the inauspicious start to the first offensive campaign of WW II.

Numerous policies and procedures were implemented fleet wide as a result of these inquiries. These policies included the importance of maintaining unit training proficiency, especially during limited visibility; improvements in radar, sonar, and communications equipment and training; the development of adequate air-search systems; more effective and

reasonable readiness condition levels of preparedness; improved fire fighting and damage control procedures; and a greater regard for the Japanese Navy, particularly in respect to its night fighting capability.<sup>59</sup>

At the operational level, the initial phase of the Solomon Island campaign lacked the detailed planning functions necessary to ensure effective coordination and synchronization. Conceived in haste, all the major commanders and staffs lacked experience in the planning and execution of complex amphibious operations.

A major breakdown occurred in tactical and operational intelligence. The inability of analysts at the operational level to predict or determine the intentions and capabilities of the Japanese to conduct a night surface attack was also demonstrated at the tactical level and throughout all echelons of command. There appeared to be limited focus on discerning patterns of activity, trends, or identification of future enemy intentions, these being the primary functions of effective operational intelligence.

The Allies also experienced significant challenges in the area of command and control. The acceleration of planning timelines, lack of rehearsal time, the development of inflexible plans, and an inability to adapt to unforeseen circumstances were apparent at the tactical level. Admiral Crutchley failed to ensure his guidance and intent were disseminated and clearly understood by subordinates. Admiral Fletcher's recommendation to withdraw the carrier force (he initiated movement without receiving final approval from South Pacific Command HQ) unhinged amphibious operations and left Major General Vandegrift and the 1st Marine Division in a precarious situation. Admiral Ghormley, the operational commander, was located at Noumea, over 1,000 miles from the area of operation. He had guestionable situational awareness of the operation and was challenged in synchronizing warfighting functions with Southwest Pacific command, as well as planning and executing an effective "deep fight" operation, particularly in terms of intelligence and fires, to include air and sub surface. His controversial decision to approve Fletcher's request to withdraw the carriers was, in hindsight, a bad choice. Ghormley may have been overly cautious of the fleets most valuable asset, the carrier, or trusted Fletcher's report concerning aircraft attrition and low fuel. In fact, Fletcher had made known his intentions of providing support to amphibious operations for only two days at a meeting with all principal commanders on 26 July. Ghormley did not attend this conference. He "found it impossible to gain the time necessary for travel with possible attendant delays." 60 Withdrawing after two days had most likely been Fletcher's intention all along. Ghormley could have overridden this request prior to the start of the operation. As previously discussed, this decision ultimately affected the logistics posture of the marine ground force, which was forced to

adjust its support concept until additional resources for resupply could be marshaled and committed. Tough decisions, particularly at the operational level, require an extraordinary strength of will, moral courage, and ability to establish a mutual trust with subordinates, as well as a capacity to communicate clearly among the various dispersed elements of a command, to include adjacent units and higher headquarters. Admiral Nimitz most likely recognized Ghormley's limitations, as he was relieved several weeks after the Savo Island engagement.

As horrific as the defeat was for the Allies, the Guadalcanal and Tulagi operations could have been jeopardized or even failed if the Japanese had gained the strategic advantage through the destruction of the transports and their cargo. Although Mikawa failed to ensure his tactical success fully supported the overall operational and strategic objectives, the brilliance and daring of his plan cannot be overlooked. It capitalized on Japanese strengths and exploited Allied weaknesses; maintained unity of effort; emphasized simplicity, speed, and mass; and incorporated all available battlefield operating systems in its execution. Knowing the Allies were numerically superior, Mikawa's concept relied on intelligence, speed, surprise, and followed the tenets of Sun Tzu:

If I am able to determine the enemy's disposition while at the same time I conceal my own, then I can concentrate and he must divide. And if I can concentrate while he divides, I can use my entire strength to attack a fraction of his.  $^{61}$ 

Admiral Mikawa's method of directing his strengths against Allied weaknesses and exploiting those vulnerabilities is a classic form of asymmetric warfare, which has been defined as an indirect approach to affect a counter-balance of force. The 1999 Joint Strategy Review states:

Asymmetric approaches are attempts to circumvent or undermine U.S. weaknesses using methods that differ significantly from the U.S. expected method of operations.. Asymmetric approaches often employ innovative, non-traditional tactics, weapons, or technologies, and can be applied at all levels of warfare—strategic, operational, and tactical.<sup>62</sup>

Although the battle of Savo Island occurred almost 60 years ago, current implications still exist for the U.S. military.

# **ASYMMETRIC CHALLENGES**

Since the end of the Cold War, the U.S. military has demonstrated an inimitable ability to conduct joint contingency operations. As the world's sole remaining superpower, the U.S. national strategy emphasizes global engagements, and thru cooperation with allies and coalition partners, has increasingly employed its military as an extension of diplomatic efforts in an increasing ambiguous and dangerous world. The U.S. has no identified conventional war making peer, and is generally dominant against relatively symmetric threats, where adversaries seek to directly combat U.S. strengths. In the future, it is likely U.S. adversaries will attempt to confront and confuse through a multitude of symmetric and asymmetric actions, focusing on vulnerabilities and emphasizing the element of surprise.<sup>63</sup>

Future asymmetric threats against the U.S. are wide ranging—such as affecting international perceptions, political or economic interests, or targeting military vulnerabilities. Advances in technology, to include the incorporation of information technologies, may potentially create new targets of an asymmetric nature.<sup>64</sup> The 2001 Quadrennial Defense Review Report states:

As in the September terror attacks in New York and Washington, future adversaries will seek to avoid U.S. strengths and attack U.S. vulnerabilities, using asymmetric approaches such as terrorism, information operations, and ballistic and cruise missile attacks. The President has directed the Department to transform to meet such emerging challenges.<sup>65</sup>

To meet these new threats, U.S. military leaders are developing a comprehensive strategy to address the broad range of asymmetric dangers, in an attempt to prevent potential opponents from exploiting existing threats while deterring them from developing new ones. The current U.S. vision on how military forces will fight and win the nation's wars is reflected in Joint Vision 2020, which outlines success through the application of power projection, precision lethality, and speed. It is a likely probability future adversaries will seek to counter the key tenets of this vision through asymmetric methods.

Professors Stephen Metz and Douglas Johnson of the U.S. Army War College have recommended a series of strategic concepts that would complement the Joint Vision 2020 operational concepts in developing a strategy to counter asymmetric threats. They argue for increased focus on organizational adaptability through innovations in training, experimentation, and interagency cooperation, using technology to leverage the ability to strike targets from greater distances.<sup>67</sup>

Because of superior U.S. capabilities and the realization that potential adversaries will not meet the U.S. on "traditional" terms, the U.S. should modify its training, education, doctrine, force structure, and operational concepts. The U.S. military has the best personnel and leaders in the world. No other country spends the resources on the preparation and readiness for its forces. Unlike Savo, where the Japanese demonstrated superior tactical and technical skills and had a marked advantage over friendly forces because of a rigorous and realistic training regime, current U.S. individual and collective training programs are unmatched by any nation. These training programs should be refined and expanded however, to prepare U.S. leaders to face the myriad of asymmetric strategies of the future. Asymmetric challenges and scenarios should be incorporated into all training, education, and exercises, with the goal of developing leaders who can routinely operate and cope with uncertainty and ambiguity.

Allied leaders were soundly defeated at Savo for a variety of reasons, one of which was their lack of agility and flexibility in dealing with an adversary who planned and executed the unexpected. They focused on what they believed to be the Japanese intentions, and disregarded their capabilities. The Allies possessed the intelligence information of the Japanese sortie, but due to a traditional mindset and a conventional approach to warfare, failed to adjust their plan or forces accordingly. In today's volatile post-cold war environment, a failure to determine the motivations, intentions, and objectives of an adversary who fights "asymmetrically," may result in consequences with global impact. Potential enemies may employ weapons of mass destruction, terrorist attacks, or other high payoff methods using informational or technological tools to attack U.S. forces, infrastructure, or the will of the American people and its Allies.

U.S. reliance and dependency on technological initiatives should not provide a false sense of security in response to future operations. Commanders at Savo relied on the use of radar to provide early warning, but were unfamiliar with its capabilities and failed to properly employ these systems. Current U.S. forces must master a multitude of systems developed as the result of evolution in military affairs to ensure dominant maneuver, precision engagement, focused logistics, and full dimensional protection. U.S. component and joint training should

ensure these systems are adequately funded, fielded, trained, and effectively employed by the force. The emphasis on development and employment of technological innovations is a necessity, but the military should have a redundant capability and not lose total focus on traditional systems and techniques (e.g., basic navigation or manual gunnery procedures) in the likely event an enemy targets these new high tech assets through a cyber, space, or informational based attack.

#### CONCLUSION

Savo Island was, by all accounts, a significant tactical defeat for the U.S. military. Fortunately, the operational and strategic objectives of WATCHTOWER were achieved, due in large measure to the individual and collective heroism and ever- increasing tactical/technical proficiency of all components of the force; an unprecedented effort to mobilize the vast economic resources of a wealthy nation; and the political will and support of a country committed to total victory.

It has been 60 years since Savo. But lessons learned there—leadership, command and control, intelligence, force protection, readiness, and logistics still have application today. The difference now is that the U.S. is the sole remaining superpower in the world. This ascendancy to conventional military superiority ensures adversaries will pursue asymmetric strategies. Instead of learning the hard way on a future field of battle at the expense of hundreds or possibly thousands of lives (as was the case at Savo Island), the U.S. must develop and implement a strategy, using all instrument s of national power, to minimize its vulnerabilities in the face of these asymmetric challenges.

If successful, the U.S. will most likely maintain its preeminence on the global stage, providing vision, leadership, commitment, resources, and balance to a turbulent world. If the U.S. does not adapt, it runs the risk of joining a myriad of countries in world history that have paid a significant price for failing to adequately perceive and counter an impending threat.

WORD COUNT = 8041

## **ENDNOTES**

- <sup>1</sup> Michael Howard, <u>Clausewitz</u> (Oxford University Press, NY, NY, 1983), 39.
- <sup>2</sup> U.S. Joint Staff, <u>Joint Vision 2020</u> (Washington, D.C.: US Government Printing Office, 2000), 3.
  - <sup>3</sup> Ibid., 6-7.
- <sup>4</sup> Bruce Bennett et al., <u>What are Asymmetric Strategies</u> (Rand National Defense Research Institute, Santa Monica, CA, 1999), VIII.
  - <sup>5</sup> Ibid., 5-7.
- <sup>6</sup> Kent Roberts Greenfield, <u>American Strategy in World War II; A Reconsideration</u> (Greenwood Press Publishers, Westport, CT, 1979), 3.
- <sup>7</sup> Peter Paret, <u>Makers of Modern Strategy, from Machiavelli to the Nuclear Age</u> (Princeton University Press, Princeton, NJ, 1986), 720.
- <sup>8</sup> James W. Poling, <u>All Battle Stations Manned: The U.S. Navy in World War II</u> (Gosset and Dunlap Inc., NY, NY, 1971), 27-37.
- <sup>9</sup> Jeffrey Bauer, "World War II, The Pacific, 1942 The Battle of Savo Island Aug 1942." Available from <a href="http://www.Marshallnet.com/">http://www.Marshallnet.com/</a>~manor/ww2/savo.html; Internet; accessed 20 November 2001.
- <sup>10</sup> Denis and Peggy Warner, <u>Disaster in the Pacific New Light on the Battle of Savo Island</u> (Naval Institute Press, Annapolis, MD, 1992), 29.
- <sup>11</sup> Russell F. Weigley, <u>The American Way of War A History of United States Military Strategy and Policy</u> (Indiana University Press, Bloomington, IN, 1983), 270.
- <sup>12</sup> Samuel E. Morison, <u>History of United States Naval Operations in World War II The Struggle for Guadalcanal August 1942-February 1943</u> (Little, Brown and Company, Boston, MA, 1950), 12.
  - <sup>13</sup> Weigley, 274.
  - <sup>14</sup> Morison, 36-50.
  - <sup>15</sup> Warner, 87-89.
  - <sup>16</sup> Ibid., 258-259.
  - <sup>17</sup> Ibid., 3, 5, 29, 36-37, 226, 257.
  - <sup>18</sup> Ibid., 40-41, 254-255.

- <sup>19</sup> Ibid., 22, 36, 42, 100, 241-242.
- <sup>20</sup> Bauer, 3-4.
- <sup>21</sup> Warner, 36-39.
- <sup>22</sup> Ibid., 40-48.
- <sup>23</sup> Naval Historical Center, Department of the Navy, <u>The Battle of Savo Islands and the Eastern Solomons</u> (Washington, D.C.: U.S. Government Printing Office, 1994), 1-2.
  - <sup>24</sup> Stan Smith, <u>The Battle of Savo</u> (McFadden-Bartell Inc., NY, NY, 1962), 36-42.
  - <sup>25</sup> Warner, 87-89.
- <sup>26</sup> Tim Lanzendorfer, "Opening Salvos: The Battle of Savo Island, Aug 9, 1942" available from http://www.microworks.net/pacific/battles; Internet; accessed 20 November 2001.
  - <sup>27</sup> Warner, 54-57.
  - <sup>28</sup> Warner, 55-56.
  - <sup>29</sup> Warner, 91-92.
  - <sup>30</sup> Smith, 36-50.
  - <sup>31</sup> Morison, 20-25.
  - <sup>32</sup> Ibid., 25-27.
  - <sup>33</sup> Ibid., 2-3.
- <sup>34</sup> Richard W. Bates and Walter D. Innis, <u>Battle of Savo Island</u> (Naval War College, Newport RI, 1951), 36-39.
  - <sup>35</sup> Morison, 28-31.
  - <sup>36</sup> Warner, 98-105.
  - <sup>37</sup> Bates, 76-77.
  - <sup>38</sup> Warner, 113-116.
  - <sup>39</sup> Morison, 34-40.
  - <sup>40</sup> Ibid., 40-52.
  - <sup>41</sup> Bates, 368-369.

- <sup>42</sup> Morison, 63.
- <sup>43</sup> Warner, 224-225, 253.
- <sup>44</sup> Bates, 343.
- <sup>45</sup> Ibid., 362-363.
- <sup>46</sup> Ibid., 344-345.
- <sup>47</sup> Warner, 241.
- <sup>48</sup> Bates, 352-353, 355.
- <sup>49</sup> Ibid., 348.
- <sup>50</sup> Warner, 215-225.
- <sup>51</sup> Department of Navy MP11858/8, Secret Information Bulletin no. 2, (Unclassified) <u>Battle Experience Solomon Islands</u> (Washington, D.C.: U.S. Department of the Navy, 1953) VIII.
  - <sup>52</sup> Warner, 244-245.
  - <sup>53</sup> Ibid., 253.
  - <sup>54</sup> Bates, 358.
  - <sup>55</sup> Ibid., 356-358.
  - <sup>56</sup> Morison, 32.
  - <sup>57</sup> Opening Salvos Battle of Savo Islands, 44.
  - <sup>58</sup> Smith, 140-149.
  - <sup>59</sup> Morison, 63-64.
  - <sup>60</sup> Warner, 52.
  - <sup>61</sup> Sun Tzu, <u>The Art of War</u> (Oxford University Press, NY,NY, 1963), 98.
- <sup>62</sup> Joint Staff, <u>Joint Strategy Review</u> (Washington, D.C.: U.S. Government Printing Office, 1999), 2.
- <sup>63</sup> David L. Grange, "Asymmetric Warfare: Old Method, New Concern," <u>ROA National Security Report</u> (March 2001): 29-32.

<sup>&</sup>lt;sup>64</sup> Stephen Metz and Douglas Johnson, "Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts", War, <u>National Security Policy and Strategy</u> Department of National Security and Strategy, U.S. Army War College 2001. 93.

<sup>&</sup>lt;sup>65</sup> Department of Defense, <u>Defense Quadrennial Review Report 2001</u> (Washington, D.C.: Government Printing Office September 2001), 61-62.

<sup>&</sup>lt;sup>66</sup> Bennett, 11.

<sup>&</sup>lt;sup>67</sup> Metz and Johnson, 71-93.

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